

**LEE METCALF NATIONAL WILDLIFE REFUGE
PRELIMINARY AMPHIBIAN AND REPTILE INVESTIGATIONS: 1996**

A Report to:

U.S. Fish and Wildlife Service

Lee Metcalf National Wildlife Refuge
P.O. Box 257
Stevensville, MT 59870

Submitted by

Paul Hendricks

May 1997

Montana Natural Heritage Program
1515 East Sixth Avenue
P.O. Box 201800
Helena, MT 59620-1800

© 1997 *Montana Natural Heritage Program*

This document should be cited as follows:

Hendricks, P. 1997. Lee Metcalf National Wildlife Refuge preliminary amphibian and reptile investigations: 1996. Montana Natural Heritage Program. Helena, MT. 27 pp.

ABSTRACT

During summer 1996, field surveys of resident amphibians and reptiles were initiated on Lee Metcalf National Wildlife Refuge, Ravalli County, Montana. Studies were focused on three projects: 1) compilation of available specimen and sight records for the area, 2) preliminary assessment of Bullfrog (*Rana catesbeiana*) distribution and status, 3) preliminary assessment of Painted Turtle (*Chrysemys picta*) distribution and status.

Five species of amphibian and seven species of reptile have been reported from the Bitterroot Valley between Victor and Florence. Long-toed Salamander (*Ambystoma macrodactylum*), Tailed Frog (*Ascaphus truei*), Western Toad (*Bufo boreus*), Bullfrog, Spotted Frog (*Rana pretiosa*), Painted Turtle, Western Skink (*Eumeces skiltonianus*), Rubber Boa (*Charina bottae*), Gopher Snake (*Pituophis catenifer*), Western Terrestrial Garter Snake (*Thamnophis elegans*), and Common Garter Snake (*Thamnophis sirtalis*) were recorded in the Bitterroot River floodplain, which includes Lee Metcalf National Wildlife Refuge. In recent years few amphibians other than Bullfrogs have been reported from the refuge.

Bullfrogs are abundant on the refuge; adults and transformed juveniles were noted in 10 water bodies, and probably are present in several others. On 29 August, 449 frogs were counted in North Slough during a census of the entire shore and adjacent water; the slough probably contained well over 2000 individuals. Sweeping with dip nets nearshore resulted in capture of only one group of 5 tadpoles, suggesting that transformation of many tadpoles had already occurred. Many Bullfrog tadpoles were seen that same day, however, at the Florence Bridge Fishing Access site, about 5 km north of the refuge. Juvenile Bullfrogs with tails still present were seen in ponds near Barn Slough on 16 September. Available information indicates that transformation occurs over several weeks.

Painted Turtles are found throughout the refuge (noted in nine water bodies in 1996), although they were not seen in some ponds with gravel bottoms (e.g., Pond 2). No estimate of numbers was made for any water body, but 28 adults were observed basking at one time in the Viewing Pond on 13 September. A trapping effort was conducted in September; 3 adult males were captured (all in or near the Viewing Pond and Barn Slough), measured, and marked. Trapping probably occurred too late for maximum effectiveness, but the methodology will work for future efforts. No data on nesting habitat, clutch size, and nest success were gathered.

ACKNOWLEDGMENTS

Special thanks to Pat Gonzales and Sharon Browder (Lee Metcalf National Wildlife Refuge) for encouragement and interest in the project. The amphibian and reptile work at the refuge would not be moving along without their help and enthusiasm. Lori Nordstrom (U.S.F.W.S., Helena) obtained funds for this initial effort. Jim Reichel, Kerwin Werner, Bryce Maxell, and Julie York helped with the field work, and shared ideas for sampling and future efforts. Turtle traps were obtained on loan through Joe Ball (Montana Cooperative Wildlife Research Unit). Cedron Jones generated the distribution maps from records in the Montana Natural Heritage Program database.

INTRODUCTION

Many amphibian species in the western United States are experiencing dramatic population declines (Blaustein et al. 1994, Phillips 1995). A litany of explanations, including elevated predation rates and introduced exotics, have been proposed, any or all of which could contribute to the downward trends (Corn and Fogelman 1984, Phillips 1990).

Conditions at Lee Metcalf National Wildlife Refuge have caused concerns about the resident native amphibian and reptile populations. First, nest predators (mammals and birds) are numerous on the refuge; coupled with this is the impression that few hatchling Painted Turtles are recruited into the local population. The concern is that predators are destroying most nests and young. Second, there is a large population of exotic Bullfrogs on the refuge and general absence of native amphibians, even though the refuge could support other amphibian species. The impact of Bullfrogs on native species is not known, nor is there any quantitative data available on the size and extent of the Bullfrog population on the refuge.

Preliminary surveys were initiated in 1996 to gather together information on the amphibians and reptiles on the refuge. First, museum and sight records were compiled for the Bitterroot Valley between Victor and Florence; this region includes Lee Metcalf National Wildlife Refuge. Additional observations of amphibians and reptiles in this area were recorded during field surveys in 1996, and place the refuge in context with what is known about the regional herpetofauna (Hendricks and Reichel 1996). These data were plotted on distribution maps generated from records in the Montana Natural Heritage Program database. Second, a preliminary inventory of Bullfrog presence across the refuge was conducted, and attempts were made to estimate numbers in isolated ponds. Third, a preliminary inventory of Painted Turtle presence across the refuge was conducted concurrent with the Bullfrog inventory; sites suitable for trapping and marking turtles were located and a pilot trapping effort was begun.

METHODS, RESULTS, AND DISCUSSION

Amphibian and Reptile Species in the Refuge Area

Compilation of museum specimen and sight records resulted in 12 amphibian and reptile species documented in the Bitterroot Valley area between Victor and Florence (see distribution maps). Included species were one salamander (Long-toed Salamander), four frogs (Tailed Frog, Western Toad, Bullfrog, Spotted Frog), one turtle (Painted Turtle), two lizards (Northern Alligator Lizard, Western Skink), and four snakes (Rubber Boa, Gopher Snake, Western Terrestrial Garter Snake, Common Garter Snake). All species but the Northern Alligator Lizard have been reported in or immediately adjacent to the Bitterroot River floodplain, where Lee Metcalf National Wildlife Refuge is located. This suggests that most or all of these species could occur on the refuge, given suitable conditions.

Records of amphibians and reptiles in the Montana Natural Heritage Program database for Lee Metcalf National Wildlife Refuge include far fewer species (Bullfrog, Painted Turtle, Gopher Snake, Western Terrestrial Garter Snake). This discrepancy is probably an artifact rather than a real historical absence from the refuge; most sightings probably never get reported or recorded. For example, personnel at the refuge mentioned encounters with Long-toed Salamanders and Spotted Frogs in recent years, but no file of amphibian and reptile observations is maintained (Gonzales pers. comm.). Nevertheless, failure to observe these amphibians on the refuge during 1996, even though Long-toed Salamander and Spotted Frog (as well as Bullfrog, Painted Turtle, Western Terrestrial Garter Snake, and Common Garter Snake) were observed 5 km north at the Florence Bridge Fishing Access, indicates the possibility of greatly reduced populations on the refuge.

Bullfrogs

To assess Bullfrog distribution on the refuge, visits were made to most ponds and water bodies at least once during suitable weather. Most visits were made in late August and September, however, which likely influenced impressions of presence and relative abundance.

Bullfrogs were found throughout the refuge, from Pond 13 in the north to Pond 3 in the south (n = 10 sites). Bullfrogs probably occur in most water bodies of relative permanence, although it is not known in what percentage reproduction occurs. Because adults burrow in mud to hibernate during winter, ponds with gravel bottoms and little mud may not be occupied year-round by this species. Originally, it was planned to sample an entire pond for Bullfrogs, but a suitable site was not located until necessary field help was no longer available. Instead, entire shoreline counts were considered the most likely method to provide an estimate of relative abundance. The entire shoreline of North Slough was walked on 29 August (air temp. = 21°C, water temp. = 18.5°C; 11:40-12:45). Five persons walked different segments, sweeping the nearshore water for tadpoles and counting the number of adult and juvenile frogs encountered from the shore to about 6 m offshore. During this survey 449 individual frogs were counted (the majority were small adults and juveniles: SVL = 7-9 cm). Given the volume of the slough and the area actually sampled, the count was estimated to be as much as an order of magnitude low; North Slough population was considered to be at least 2000 individuals. The total Bullfrog population on the refuge must be much larger, but the age/size structure of the population (or any subpopulation) is unknown.

Only 5 tadpoles (TL = 5.5-7.0 cm) were collected during nearshore netting in North Slough, indicating most tadpoles had already transformed in this pond. Bullfrog tadpoles were much more abundant in one pond at the Florence Bridge Fishing Access site on the same day, indicating transformation occurred at different times among (and within?) ponds. Transformed juvenile Bullfrogs (SVL = 6.0 cm) with tails 4 cm long, and tailless juveniles of the same size, were present in a small pond north of Barn Slough on 16 September (air temp = 15°C, water temp. = 14°C). Transformation of tadpoles in Missouri takes 11-14 months (Willis et al. 1956), but time between hatching and transformation is not known for Montana populations. Size at transformation in Oregon is 11.5-14.0 cm TL and typically occurs in August and September (Nussbaum et al. 1983) after tadpoles overwinter.

Painted Turtles

As with Bullfrogs, visits were made to ponds throughout the refuge to determine the distribution of Painted Turtles. Turtles were found in nine large ponds and were absent from four ponds where Bullfrogs were present. Three of these ponds were very small (< 60 m diameter or long) and ephemeral, and the fourth (Pond 3) apparently has a gravel bottom with little accumulated mud. Painted Turtles, like Bullfrogs, need ponds with deep mud bottoms in which to hibernate for the winter. It is not known how much movement occurs between ponds, nor if some ponds are used for brief periods. Number of turtles in any pond is unknown. On 13 September (air temp. = 22°C), 28 Painted Turtles were counted basking at one time in Pond 5. Number of basking turtles at any time is limited by the availability of basking sites (logs, rocks, open banks). Thus, the count for Pond 5 is a minimum estimate of the resident population on that date.

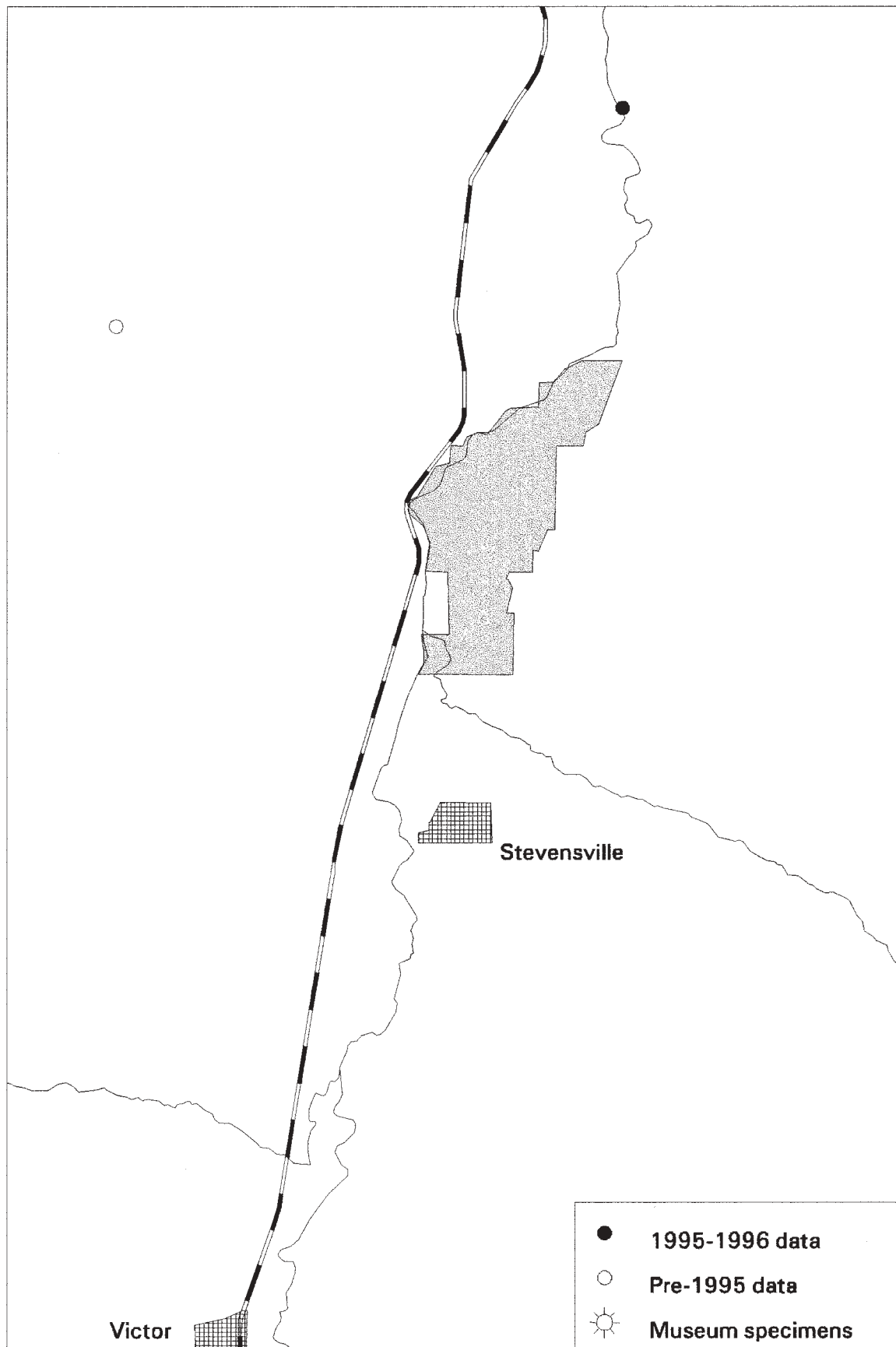
Ten basking traps (Fowle 1996) were set in North Slough and Barn Slough on 9 September. The traps in North Slough were moved to Pond 5 on 13 September. Traps were checked every 2-3 days and were retrieved on 23 September. Trap success was low. Cool and wet weather could have contributed to this, and some traps had brittle netting through which some turtles apparently escaped. More time might have been necessary for turtles to habituate to the presence of the traps, and trapping might be more successful earlier in the summer. All of these factors need to be considered in future trapping efforts.

All captured Painted Turtles (n = 3) were adult males. Each was given a unique set of marks (see Appendix) by notching various combinations of marginal scutes with a triangular file (see Cagle 1939 and Fowle 1996 for discussions of marking procedures), weighed, and measured (plastron length and width). Two males were caught in Pond 5 and one in Barn Slough; it is likely that turtles move back and forth between these two water bodies. Weights (g) were 585, 740, and 765. Respective plastron lengths (cm) were 16.2, 16.8, and 17.7; plastron widths (cm) were 10.7, 11.1, and 11.4.

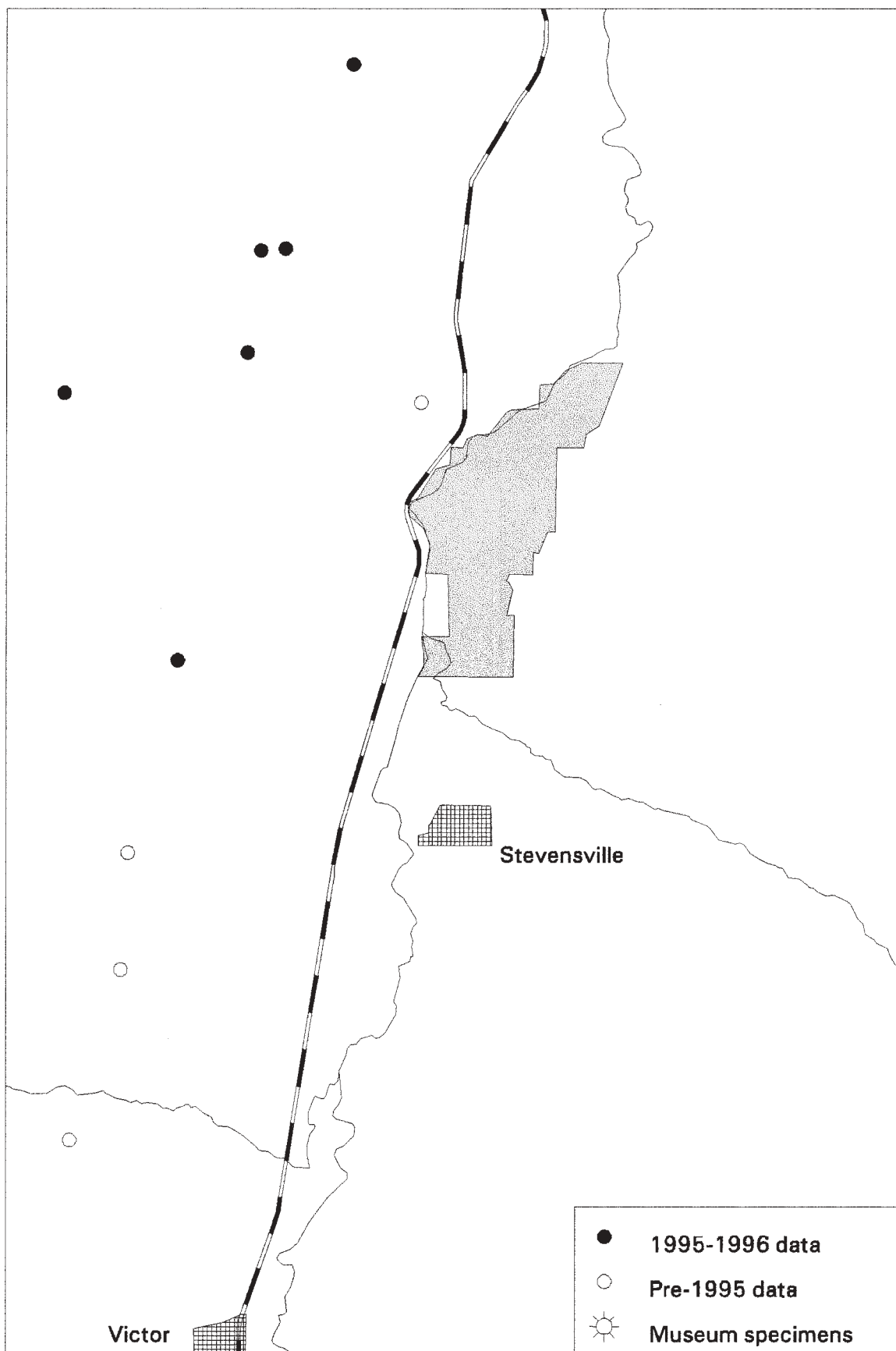
No attempt was made to locate nests and follow their fates. No small juvenile turtles were noted during trapping and surveys, but no systematic pond watches were made, which precludes assuming their absence. These aspects of the life cycle need study to determine if recruitment in the Painted Turtle population at Lee Metcalf National Wildlife Refuge is exceptionally low. Adult survivorship is usually high in Painted Turtles, which are long-lived once they reach adulthood; nest loss

can be substantial (>50-60%), and hatchling mortality can also be high (see Gibbons 1968, Tinkle et al. 1981, Snow 1982, Christens and Bider 1987, Zweifel 1989, Lindeman 1991, Iverson and Smith 1993). It is unknown, at this time, if stage-related mortality is unusual on the refuge or typical of many populations.

LONG-TOED SALAMANDER - AMBYSTOMA MACRODACTYLUM

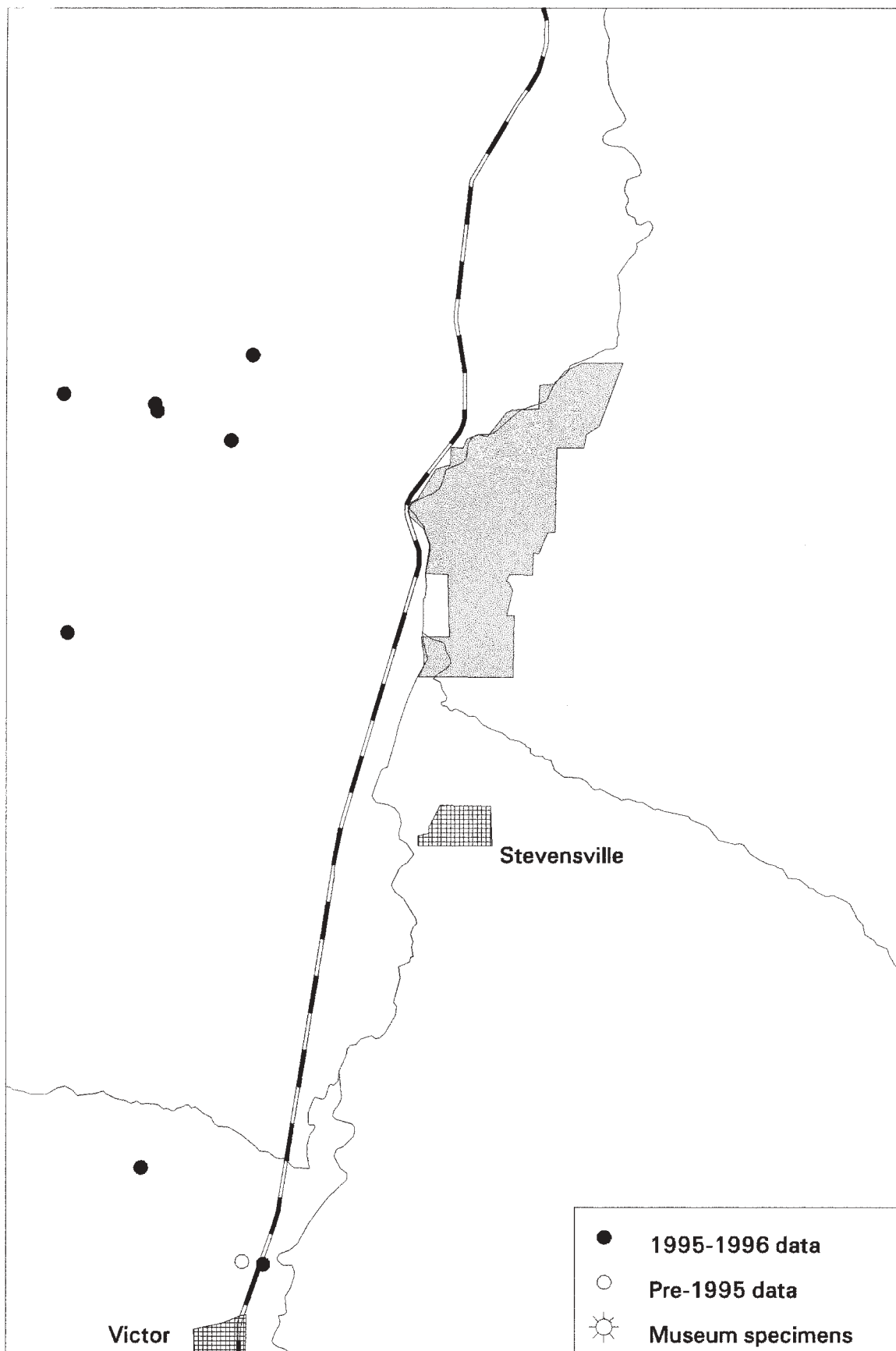


TAILED FROG - ASCAPHUS TRUEI



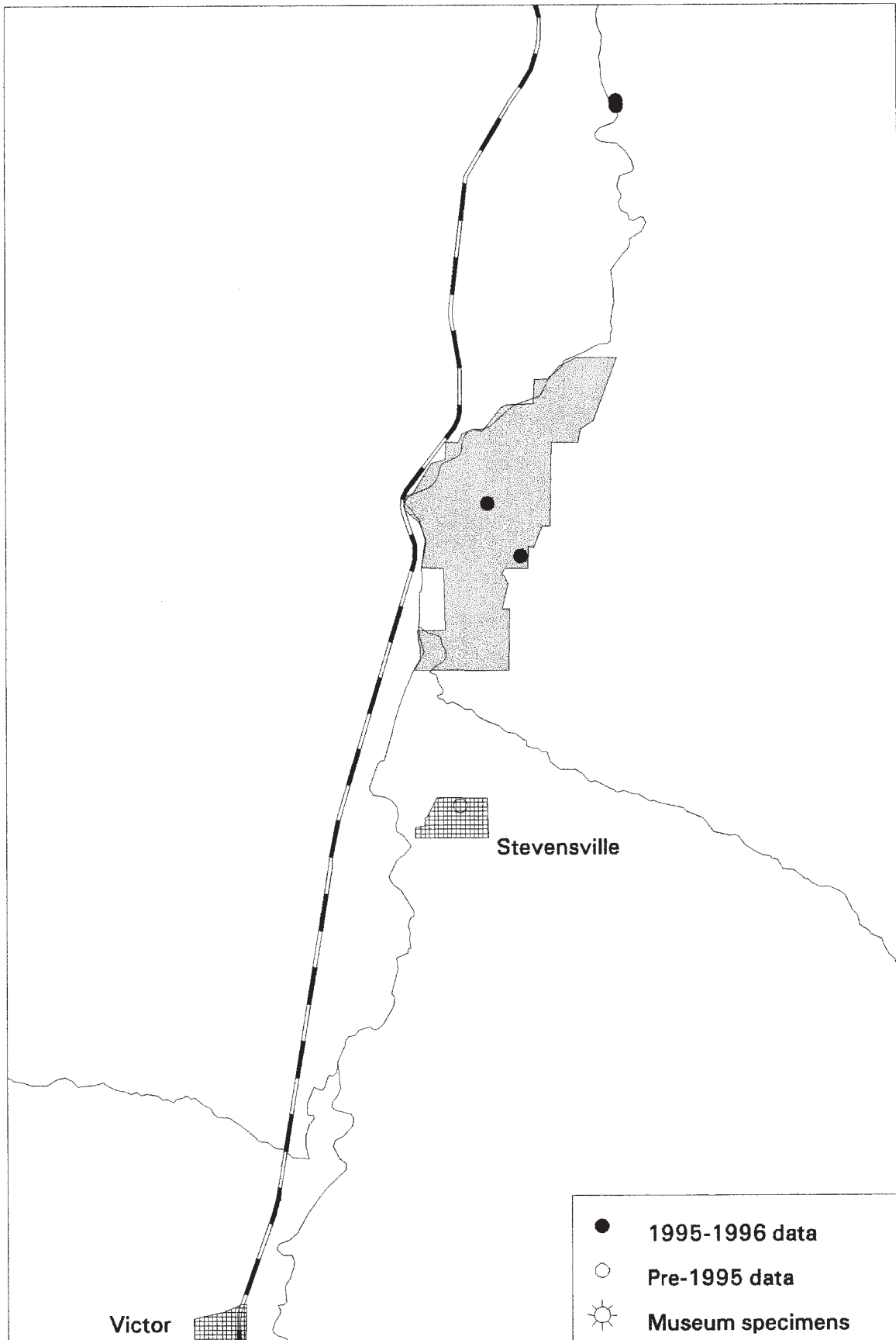
Montana Natural Heritage Program, January 19, 1997

WESTERN TOAD - BUFO BOREAS

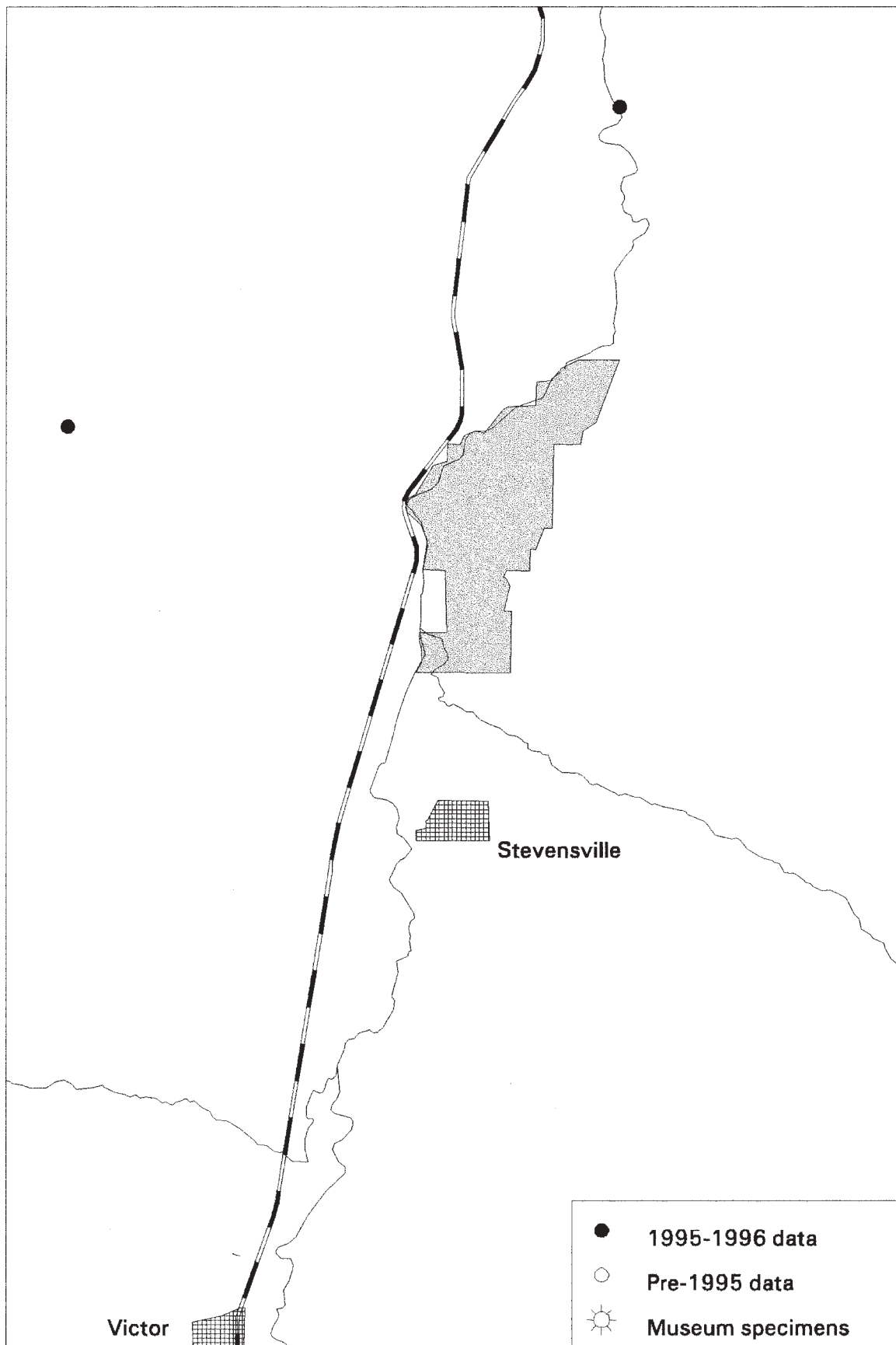


Montana Natural Heritage Program, January 19, 1997

BULLFROG - RANA CATESBEIANA

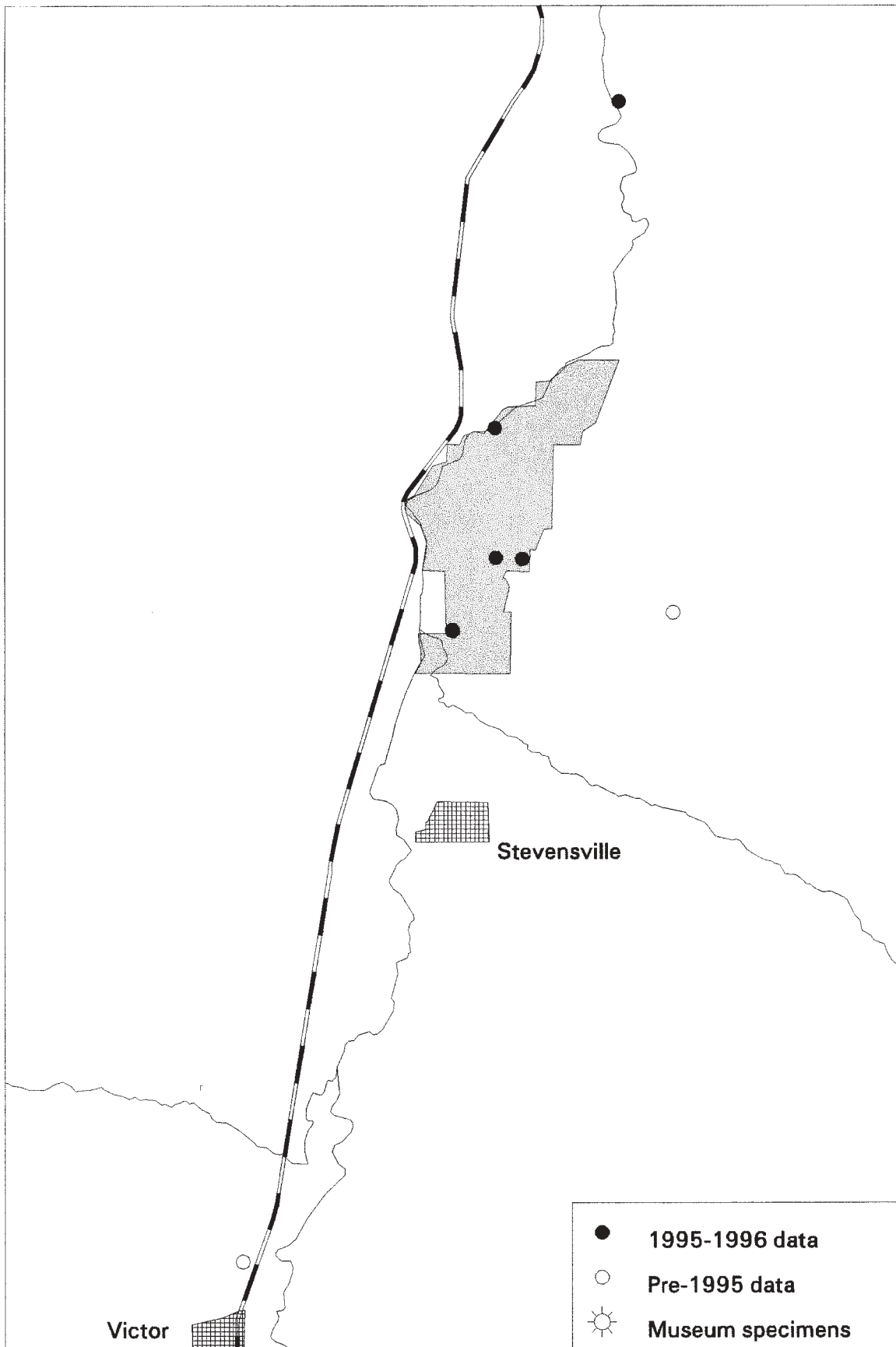


SPOTTED FROG - RANA PRETIOSA



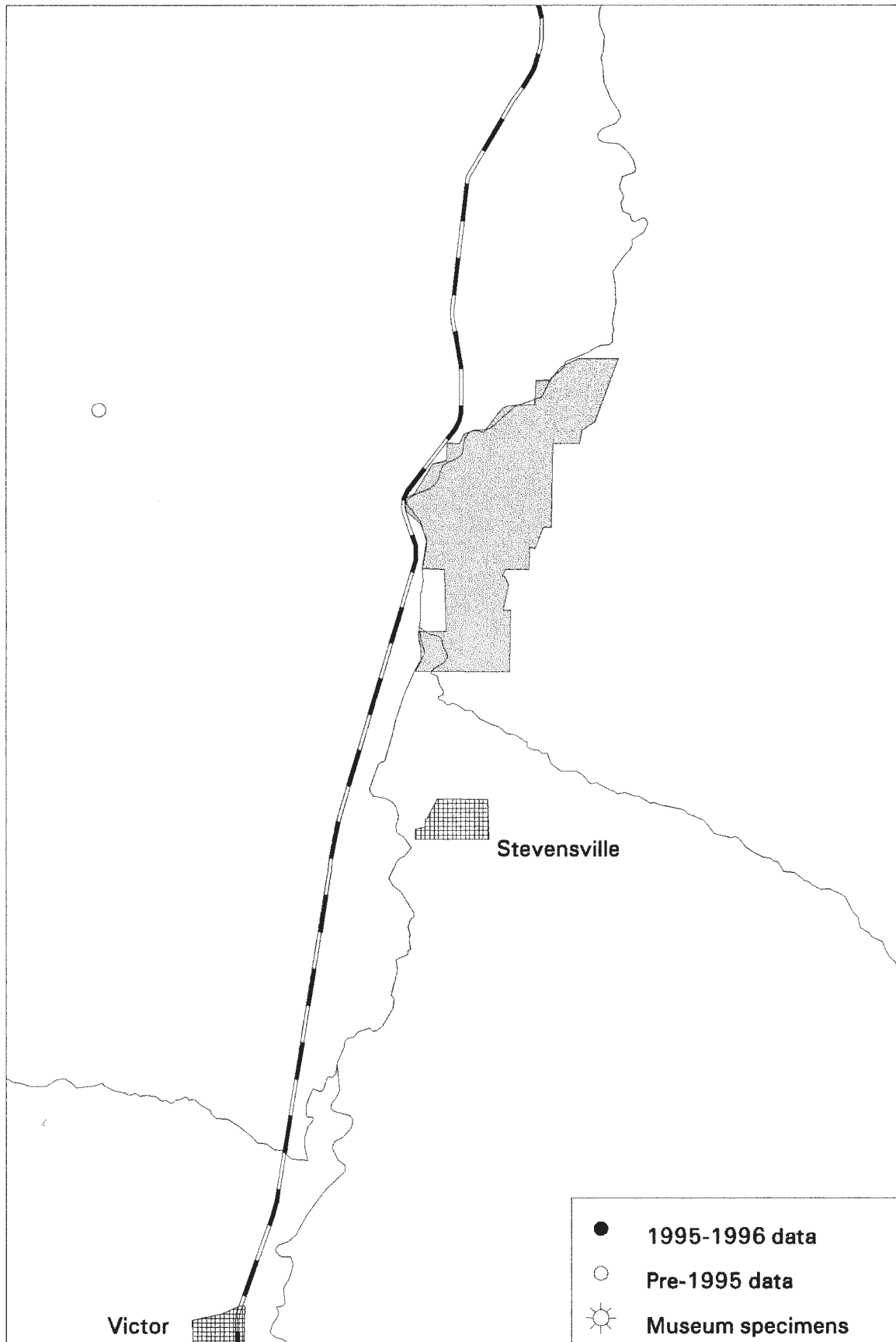
Montana Natural Heritage Program, January 19, 1997

PAINTED TURTLE - *CHRYSEMYYS PICTA*



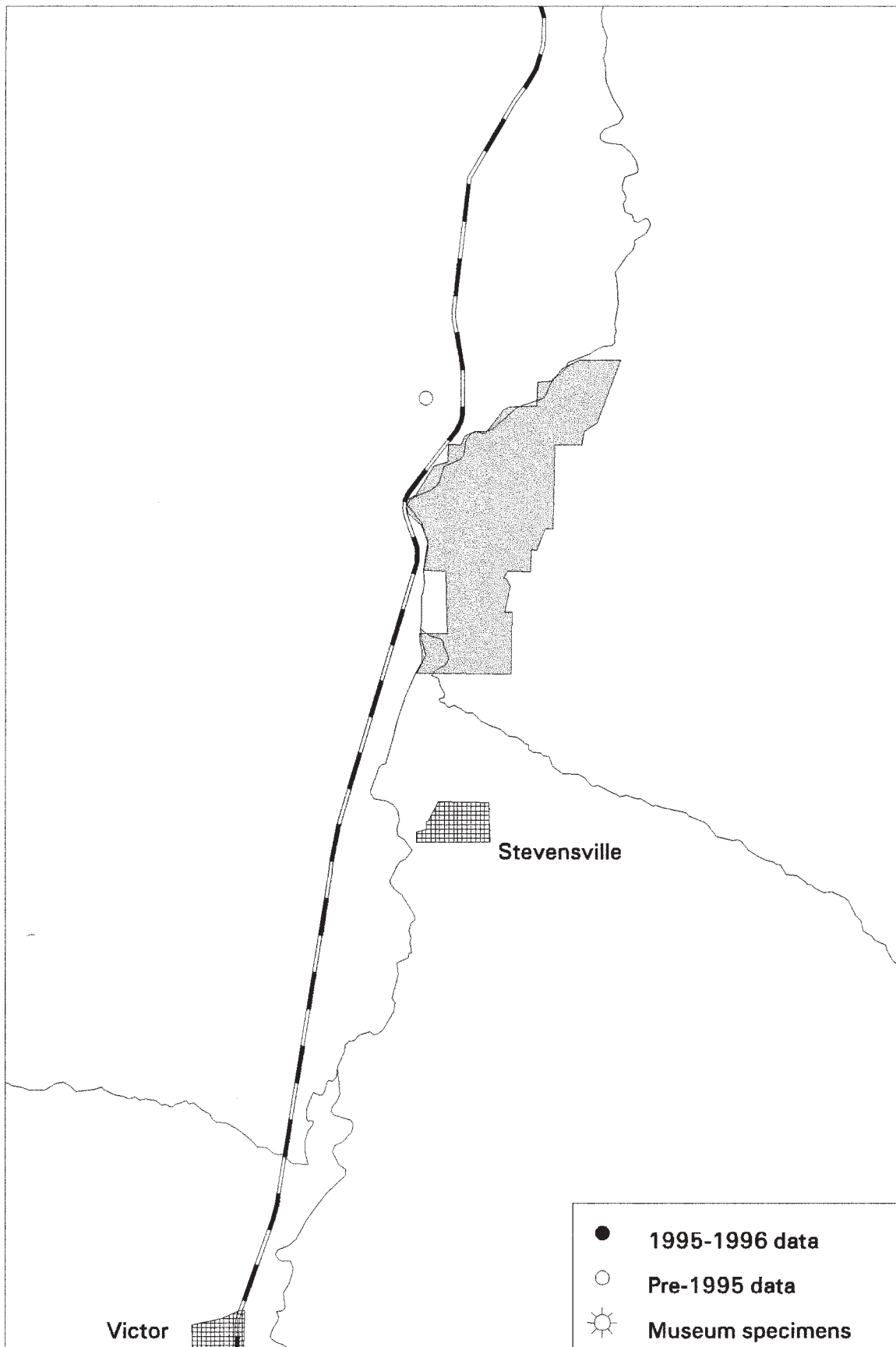
Montana Natural Heritage Program, January 19, 1997

NORTHERN ALLIGATOR LIZARD - *ELGARIA COERULEA*

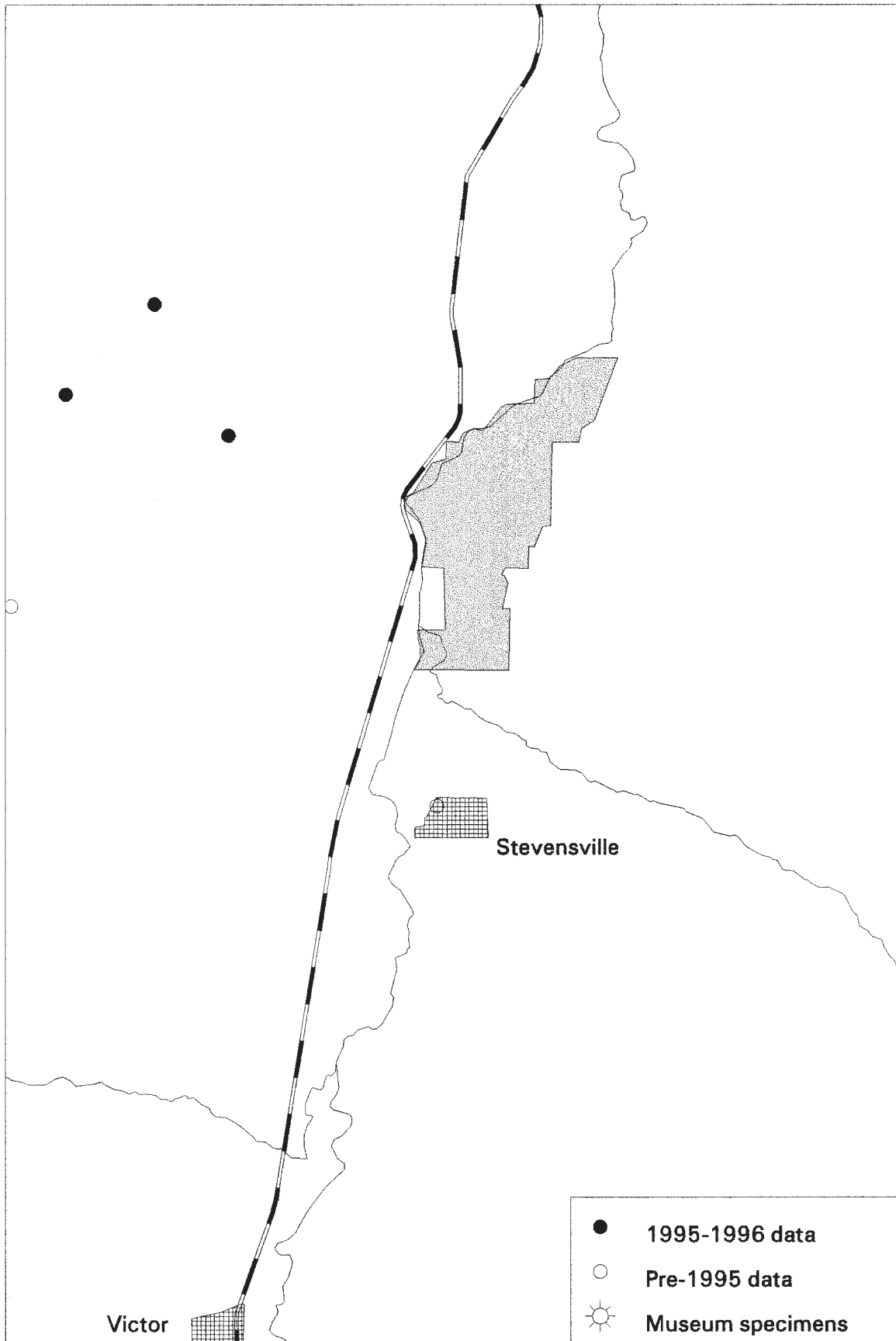


Montana Natural Heritage Program, January 19, 1997

WESTERN SKINK - EUMECES SKILTONIANUS

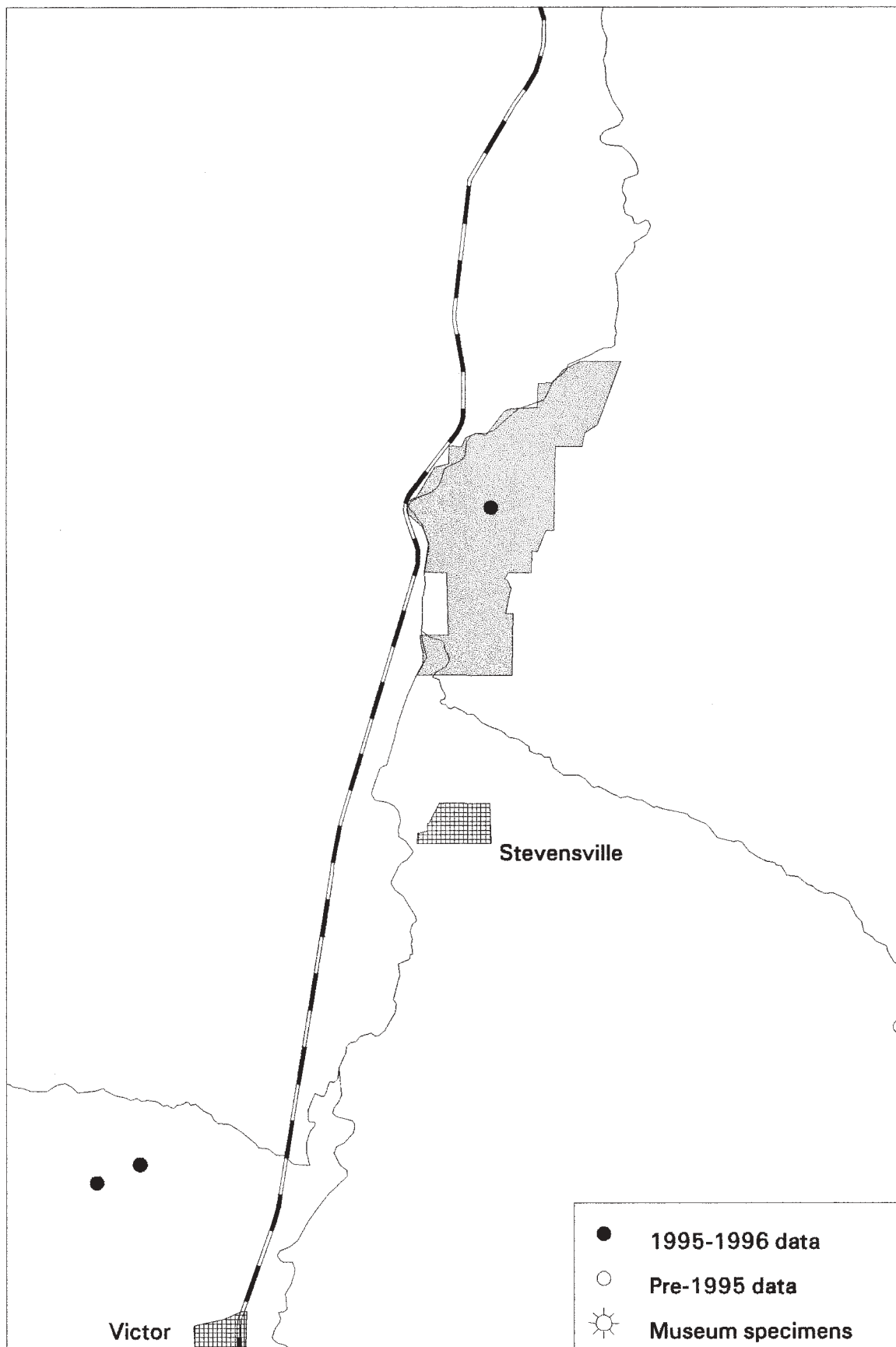


RUBBER BOA - CHARINA BOTTAE



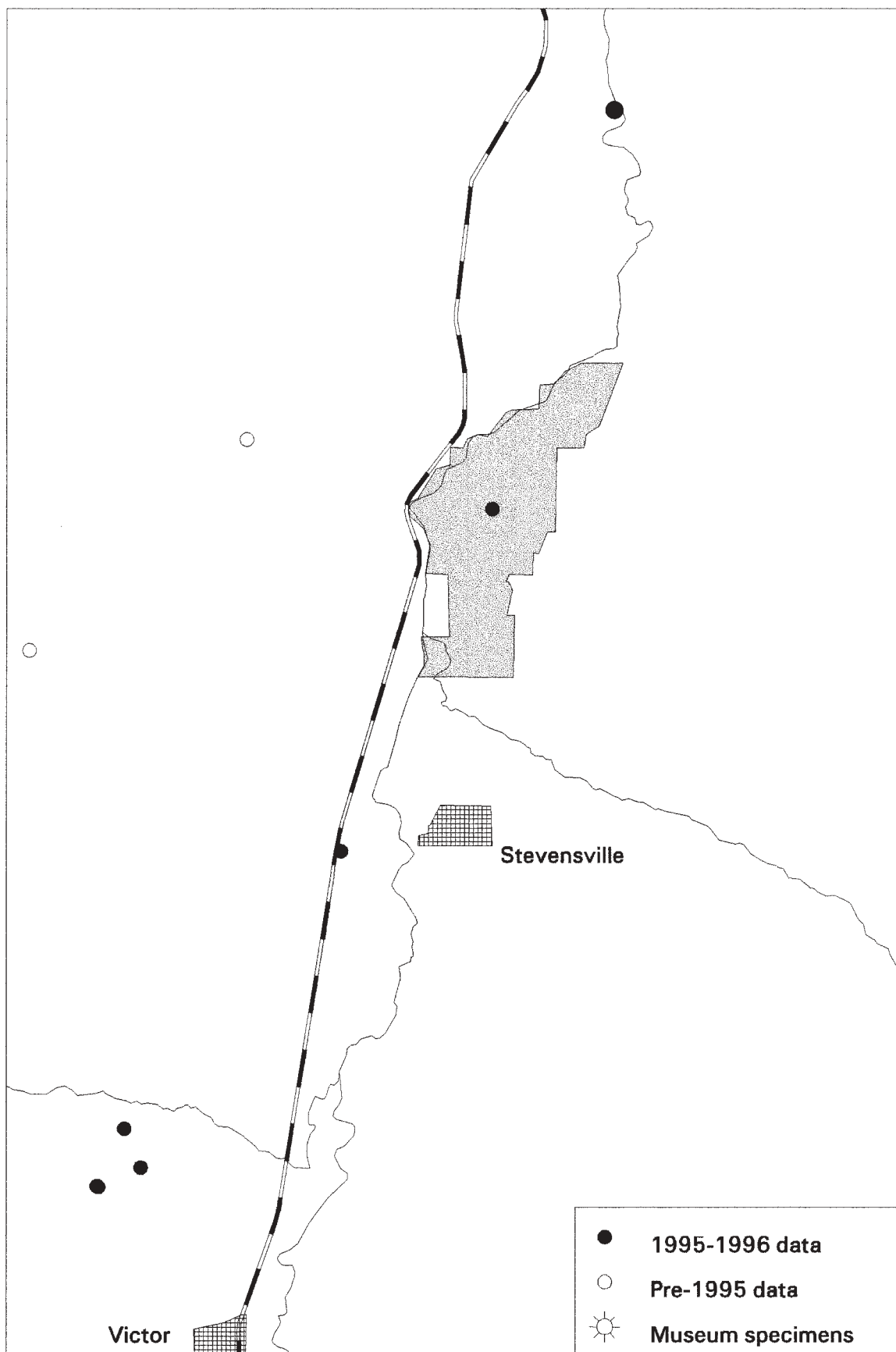
Montana Natural Heritage Program, January 19, 1997

GOPHER SNAKE OR BULLSNAKE - PITUOPHIS CATENIFER



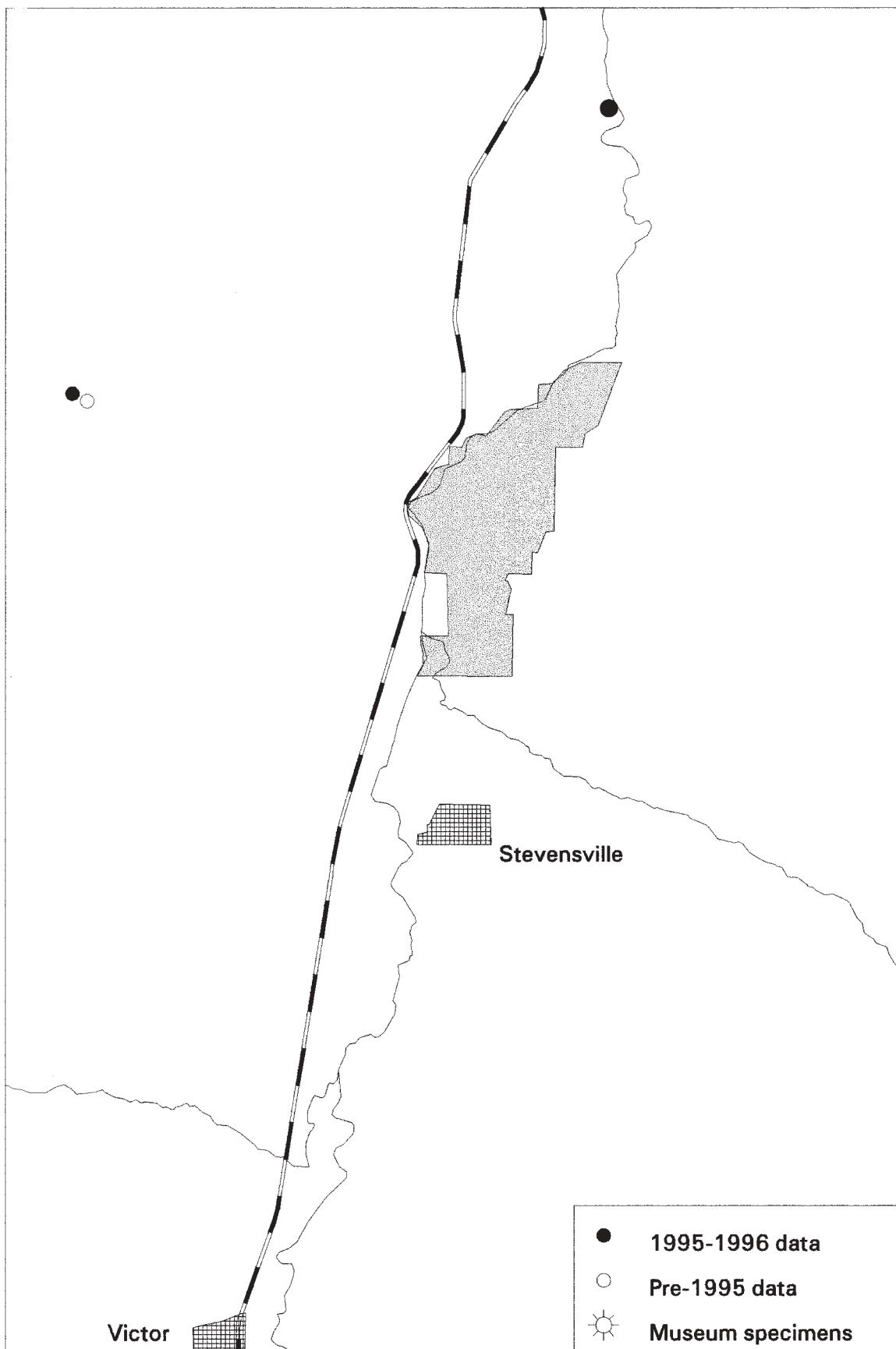
Montana Natural Heritage Program, January 19, 1997

WESTERN TERRESTRIAL GARTER SNAKE - THAMNOPHIS ELEGANS



Montana Natural Heritage Program, January 19, 1997

COMMON GARTER SNAKE - THAMNOPHIS SIRTALIS



Montana Natural Heritage Program, January 19, 1997

SUGGESTIONS FOR FUTURE WORK

- 1) Develop and maintain a file of all amphibian and reptile observations on the refuge. Design an observation form that can be used by all personnel, and encourage permanent and seasonal staff to become familiar with the species in the area (about a dozen species total). Of interest to the refuge are estimates of numbers of Bullfrogs and Painted Turtles in particular ponds, observations of turtle nests, acts of predation observed on nests and adults, and sightings of amphibians other than Bullfrogs. Spot counts of basking turtles in particular ponds, accompanied by weather conditions, can provide valuable estimates of relative abundance when recorded over several years for the same sites. These kinds of data do not require large blocks of time to obtain, but can be very useful for detecting changes that may be occurring on the refuge.
- 2) Continue efforts to mark Painted Turtles and gather age (size) distribution data; initial efforts should concentrate on one or two ponds (Pond 5 and Barn Slough). Locate turtle nests and monitor their fates. Determine which predators prey on nests and hatchlings. Refuge personnel indicated that nesting routinely occurs along the railroad tracks. This would be a good place to develop a nest-monitoring program. At some time, with suitable funding, follow movements of radio-marked turtles to determine distances moved and amount of movement between ponds. Radio-marked females could be followed to nest sites, as well.
- 3) Continue efforts to estimate the size of the Bullfrog population on the refuge; continue shoreline counts of Bullfrogs in North Slough. Determine when mating and egg-laying occur, time of transformation for tadpoles, length of tadpole phase, food habits of adults, and habitat suitability across the refuge (Are all water bodies used by Bullfrogs? Is Bullfrog reproduction successful in ponds occupied by predatory fish?). Almost nothing is known about the biology of Bullfrogs in this region of North America. A study of overwinter survivorship could provide insight about the factors restricting the spread of this species in western Montana.

LITERATURE CITED

- Blaustein, A. R., D. B. Wake, and W. P. Sousa. 1994. Amphibian declines: judging stability, persistence, and susceptibility of populations to local and global extinctions. *Conservation Biology* 8:60-71.
- Cagle, F. R. 1939. A system of marking turtles for future identification. *Copeia* 1939:170-173.
- Christens, E., and J. R. Bider. 1987. Nesting activity and hatching success of the Painted Turtle (*Chrysemys picta marginata*) in southwestern Quebec. *Herpetologica* 43:55-65.
- Corn, P. S., and J. C. Fogelman. 1984. Extinction of montane populations of Northern Leopard Frog (*Rana pipiens*) in Colorado. *Journal of Herpetology* 18:147-152.
- Fowle, S. C. 1996. The Painted Turtle in the Mission Valley of western Montana. Unpublished Masters Thesis. University of Montana, Missoula. 101 pp.
- Gibbons, J. W. 1968. Population structure and survivorship in the Painted Turtle, *Chrysemys picta*. *Copeia* 1968:260-268.
- Hendricks, P., and J. D. Reichel. 1996. Amphibian and reptile survey of the Bitterroot National Forest: 1995. Montana Natural Heritage Program. Helena, MT. 95 pp.
- Iverson, J. B., and G. R. Smith. 1993. Reproductive ecology of the Painted Turtle (*Chrysemys picta*) in the Nebraska Sandhills and across its range. *Copeia* 1993:1-21.
- Lindeman, P. V. 1991. Survivorship of overwintering hatchling Painted Turtles, *Chrysemys picta*, in northern Idaho. *Canadian Field-Naturalist* 105:263-266.
- Nussbaum, R. A., E. D. Brodie, Jr., and R. M. Storm. 1983. Amphibians and reptiles of the Pacific Northwest. University of Idaho Press, Moscow. 332 pp.
- Phillips, K. 1990. Where have all the frogs and toads gone? *BioScience* 40:422-424.
- Phillips, K. 1994. Tracking the vanishing frogs. Penguin Books, New York. 244 pp.
- Snow, J. E. 1982. Predation on Painted Turtle nests: nest survival as a function of nest edge. *Canadian Journal of Zoology* 60:3290-3292.
- Tinkle, D. W., J. D. Congdon, and P. C. Rosen. 1981. Nesting frequency and success: implications for the demography of Painted Turtles. *Ecology* 62:1426-1432.
- Willis, Y. L., D. L. Moyle, and T. S. Baskett. 1956. Emergence, breeding, hibernation, movements and transformation of the Bullfrog, *Rana catesbeiana*, in Missouri. *Copeia* 1956:30-41.

Zweifel, R. G. 1989. Long-term ecological studies on a population of Painted Turtles, *Chrysemys picta*, on Long Island, New York. American Museum Novitates Number 2952. 55 pp.

APPENDIX 1
TURTLE MARKING FORM

TURTLE MARKING FORM

DATE:

LOCATION:

TEMPERATURE (AIR):

TEMPERATURE (WATER):

SEX:

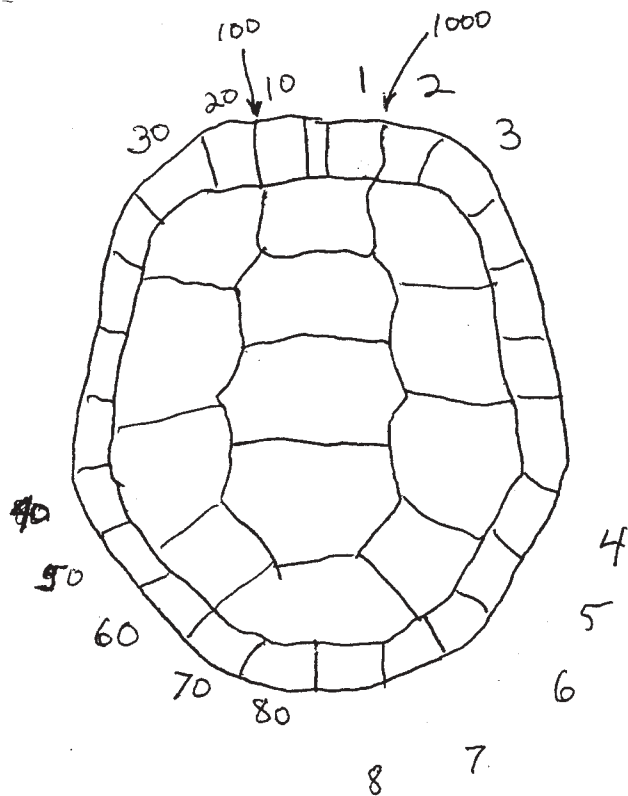
WEIGHT:

MAX. PLASTRON LENGTH:

MAX. PLASTRON WIDTH:

COMMENTS:

INDIVIDUAL NUMBER:



APPENDIX 2

SUMMARY OF AMPHIBIAN AND REPTILE RECORDS

BETWEEN FLORENCE AND VICTOR

Multi_Species_Report

CNAME	DATE	SURVEY	DATA TYPE	BREEDING	MUSEUM #	COLLECTOR
COUNTY	TOWNRANGE					
LOCATION	COMMENTS					
LONG-TOED SALAMANDER <i>AMBYSTOMA MACRODACTYLUM</i>						
7 25 1978	Observation	P	Dunlap, B.			
Ravalli	T10NR21W	25				
East shoulder Little St. Joe,						
6280 ft.						
8 29 1996	MT960001	Observation	B	Werner, J.		
Ravalli	T10NR20W	12	SE			
Florence Bridge Fishing Access						
Site						
TAILED FROG <i>ASCAPHUS TRUEI</i>						
6 1 1955	Museum specimen	P	USNM 334419	Johnson, Roland		
Ravalli	T08NR21W	11				
Big Creek						
8 23 1984	Museum specimen	P	MVZ 191013	Good, D. A.		
Ravalli			0			
Larry Creek Road, ca. 0.25 mi.						
below 1st jct. above Larry Cr.						
Campground						
6 28 1993	Observation	P	FS Personell			
Ravalli	T09NR21W	25				
Silverthorn Creek		1-10	individuals			
8 17 1993	Observation	P	FS Personell			
Ravalli	T08NR21W	1				
McCalla Creek		1-10	individuals			
3 30 1995	Observation	P	FS Personell			
Ravalli	T10NR21W	35				
Bass Creek, below Barrier Falls		Abundant.				
7 18 1995	Observation	P	FS Personell			
Ravalli	T10NR21W	36				
Bass Creek		>50	individuals			
7 10 1995	Observation	P	FS Personell			
Ravalli	T10NR20W	29				
Larry Creek		1-10	individuals.	Also	observed	
		8-3-90.				
8 2 1995	Observation	P	FS Personell			
Ravalli	T10NR20W	20				
Sweeney Creek		11-30	individuals.	Also	observed	
		9-21-95.				
8 31 1995	Observation	P	FS Personell			
Ravalli	T10NR20W	9				
One Horse Creek		11-30	individuals			
8 22 1995	Observation	P	FS Personell			
Ravalli	T09NR20W	18				
Kootenai Creek		>50	individuals.	Also	observed	
		8-18-93.				
9 21 1995	Observation	B	Torquemada, R.			
Ravalli	T10NR20W	20				
Sweeney Creek		>20	larvae			

CNAME	DATE	SURVEY	DATA TYPE	BREEDING	MUSEUM #	COLLECTOR
-------	------	--------	-----------	----------	----------	-----------

COUNTY LOCATION	TOWNRANGE	COMMENTS
--------------------	-----------	----------

WESTERN TOAD

BUFO BOREAS

0 0 1967	Observation	B	
Ravalli		0	
Two large ponds, 1 mi. N. of Victor.	Also observed in 1966.		
6 16 1995	Museum specimen	B	MTHP 4013 P. Hendricks
Ravalli	T08NR20W	19	
0.9 mi. NE of Victor, on W. side of HWY 93	1000's of tadpoles, 1 egg mass.		
7 19 1995	Observation	P	Jakober, M.
Ravalli	T10NR20W	31	
On Bass Creek Trail #4, ca. 1 mi. above trailhead	4 adults		
7 18 1995	Observation	P	Torquemada, R.
Ravalli	T10NR20W	31	
Bass Creek Trail #4	4 adults		
7 5 1995	Observation	P	Hoy, J.
Ravalli	T08NR20W	13	
Hoy's yard	Also observed 22 Aug 1995, 24 Aug 1995, 10 Sept 1995		
7 18 1995	Observation	B	Torquemada, R.
Ravalli	T10NR20W	32	
Bass Creek	>20 larvae		
7 18 1995	Observation	P	Torquemada, R.
Ravalli	T10NR21W	36	
Bass Creek Trail #4	2 adults		
8 15 1995	Observation	P	Hoy, J.
Ravalli	T09NR21W	13	
Kootenai Cr. Trail			
9 15 1995	Observation	P	Jakober, M.
Ravalli	T10NR20W	29	
In Larry Cr., just above upper road crossing of FS RD 1316	1 adult		

BULLFROG

RANA CATESBEIANA

6 4 1966	Observation	B	
Ravalli		0	
Near Stevensville in shallow ponds.			
0 0 1995	Observation	P	Henry, C.
Ravalli	T09NR20W	0	
Lee Metcalf Refuge	Lots of bullfrogs seen.		
7 12 1995	Observation	P	P. Hendricks
Ravalli	T09NR20W	11	
Lee Metcalf NWR, 3 mi. N. of Stevensville	2 adults.		
8 14 1995	Observation	P	Hendricks, P.
Ravalli	T10NR20W	12	
Florence Bridge Fishing Access Site (pond W. of road and S. of Hwy)	12 adults		

CNAME	DATE	SURVEY	DATA TYPE	BREEDING	MUSEUM #	COLLECTOR
COUNTY	TOWNRANGE					
LOCATION				COMMENTS		
BULLFROG RANA CATESBEIANA (cont.)						
8 29 1996	MT960001	Observation		B		Werner, J.
Ravalli	T10NR20W	12		SE		
Florence Bridge Fishing Access Site						
SPOTTEDFROG RANA PRETIOSA						
7 18 1995	Observation	P				Torquemada, R.
Ravalli	T10NR21W	7				
Bass Creek		1 adult				
8 1996	Observation					Corn, S.
Ravalli						
Florence, Tie Chute Creek						
8 29 1996	MT960001	Observation		P		Werner, J.
Ravalli	T10NR20W	12		SE		
Florence Bridge Fishing access Site						
PAINTED TURTLE CHRYSEMYS PICTA						
0 0 0	Specimen	P				
Ravalli	reported	0				
See map in Black 1970						
7 0 1993	Observation	P				T.C.Gendusa
Ravalli		0				
Along HWY 93, just N. of Victor		2 individuals				observed.
6 10 1995	Observation	P				P. Hendricks
Ravalli	T09NR20W	15				
Lee Metcalf NWR, 2 mi. N. of		6 adults.				
Stevensville						
6 29 1995	Observation	P				Hoy, J.
Ravalli	T09NR20W	15				
Lee Metcalf Refuge at picnic		5 counted, but more living there;				
area parking lot pond		hatched eggs found, but no small i				turtles.
7 12 1995	Observation	P				P. Hendricks
Ravalli	T09NR20W	11				
Lee Metcalf NWR, 3 mi. N. of		6 adults.				
Stevensville						
8 14 1995	Observation	P				Hendricks, P.
Ravalli	T10NR20W	12				
Florence Bridge Fishing Access		4 adults				
Site (pond W. of road and S. of Hwy)						
6 28 1996	Observation	P				Hendricks, P.
Ravalli	T09NR20W	11		NW		
Whistlers Pond, Metcalf NWR		Adults basking on logs in pond				
8 29 1996	MT960002	Observation		P		Reichel, J.
Ravalli	T10NR20W	35		SW		
North Slough, Metcalf NWR						
NORTHERN ALLIGATOR LIZARD ELGARIA COERULEA						
7 26 1963	Museum specimen	P				MVZ 187467 Teberg, E. K.
Ravalli		0				
Ca. 300 yds. beyond end of rd.;						
Bass Creek Trail						

CNAME	DATE	SURVEY DATA	TYPE	BREEDING	MUSEUM #	COLLECTOR
-------	------	-------------	------	----------	----------	-----------

COUNTY
LOCATION

TOWNRANGE

COMMENTS

WESTERN SKINK

EUMECES SKILTONIANUS

8 23 1984	Museum specimen	P	MVZ 191020	Good, D. A.
Ravalli		0		
Larry Creek Road, ca. 0.25 mi.				
Below first jct. above Larry				
Cr. Campground				

RUBBER BOA *CHARINA BOTTAE*

3 22 1910	Museum specimen	P	USNM 044265	Birdseye, C.
Ravalli		0		
Stevensville			Biological Survey	found dead
6 0 1992	Observation	P		Goslin, D&B
Ravalli	T09NR21W	11		
Kootenai Creek				
7 18 1995	Observation	P		Jakober, M.
Ravalli	T10NR21W	36		
On Bass Creek Trail at		1	adult	
wilderness boundary				
7 18 1995	Observation	P		Torquemada, R.
Ravalli	T10NR20W	32		
Bass Creek Trail #4		1	adult	
7 31 1995	Observation	P		Odegard, C.
Ravalli	T10NR20W	30		NW
Larry Creek			Boa 18" long in the road to Little	
			St. Joe. Adjacent slopes are east	
			facing & mostly forested.	

PINE OR GOPHER SNAKE

PITUOPHIS CATENIFER

8 0 1994	Observation	P		Goslin, D&B
Ravalli	T08NR19W	4		
Burnt Fork Rd.		2	snakes, also observed	June 1992
0 0 1995	Observation	P		Henry, C.
Ravalli	T09NR20W	0		
Lee Metcalf Refuge		3	snakes seen	
8 11 1995	Observation	P		Hoy, J.
Ravalli	T08NR20W	13		
Hoy's yard				
9 6 1995	Observation	P		Hoy, J.
Ravalli	T08NR20W	14		
Hoy's neighbor's yard				
9 25 1995	Observation	P		Hoy, J.
Ravalli	T08NR20W	13		
Hoy's yard				

WESTERN TERRESTRIAL
GARTER SNAKE

THAMNOPHIS ELEGANS

4 29 1910	Museum specimen	P	USNM 044269
Ravalli		0	
Stevensville, W of, Bass Creek			
3725 ft.			

CNAME	DATE	SURVEY DATA	TYPE	BREEDING	MUSEUM #	COLLECTOR
COUNTY	TOWNRANGE					
LOCATION	COMMENTS					

WESTERN TERRESTRIAL *THAMNOPHIS ELEGANS*
GARTER SNAKE (cont.)

7 12 1977	Museum specimen	P	USNM 205139	Busack, Visnaw, s
Ravalli		0		
Kootenai Creek, 4 mi above				
Bitterroot River				
0 0 1995	Observation	P		Henry, C.
Ravalli	T09NR20W	0		
Lee Metcalf Refuge				
7 12 1995	Observation	P		P. Hendricks
Ravalli	T09NR20W	28		
Along HWY 93, 1.7 mi. N. of St.	1 adult.			
Marys Peak Road				
7 14 1995	Observation	P		Hoy, J.
Ravalli	T08NR20W	13		
Hoy's yard				
7 24 1995	Observation	P		Hoy, J.
Ravalli	T08NR20W	14		
Hoy's property				
7 10 1995	Observation	P		Hoy, J.
Ravalli	T08NR20W	14		
Hoy's neighbor's yard	8 snakes counted sunning themselves.			
	Small den.			
9 23 1995	Observation	P		Hoy, J.
Ravalli	T08NR20W	13		
Hoy's property				
8 29 1996	Observation	P		P. Hendricks
Ravalli	T10NR20W	12 SE		
Florence Bridge Fishing Access	1 adult			
Site				

COMMON GARTER SNAKE *THAMNOPHIS SIRTALIS*

8 23 1984	Museum specimen	P	MVZ 191304	Good, D. A.
Ravalli		0		
Ca. 300 m. beyond end of rd.,				
Bass Creek Trail				
5 26 1996	Observation	P		Hassack, B.
Ravalli	T10NR21W	36		NW
1 - 2 mi up Bass Ck Trail				
8 29 1996	Observation	P		P. Hendricks
Ravalli	T10NR20W	12 SE		
Florence Bridge Fishing Access	1 adult			
Site				